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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,158

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Hajime Kimura

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EXAMINER

ZUBAJLO, JENNIFER L

ART UNIT

PAPER NUMBER

2629

NOTIFICATION DATE

DELIVERY MODE

12/30/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary	Application No. 10/595,158	Applicant(s) KIMURA, HAJIME	
	Examiner JENNIFER ZUBAJLO	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/9/06, 12/7/07, and 7/17/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 6, 7, 44, and 45 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4, 10, 16, 22, 29, and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what "a chopper inverter transistor" is? No where in the specification or drawing is this defined. For examination purposes, Examiner is taking a chopper inverter transistor as a chopper inverter circuit and since by definition a chopper is a switch, the chopper inverter circuit includes a switch and an inverter and a capacitor.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-11 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jie-Farn Wu (Pub. No.: US 2005/0259054 A1).

As to claim 1, Wu teaches a semiconductor device comprising: a transistor (see fig. 7A – transistor G); a current supply means electrically connected to the transistor (see fig. 7A – current source I); and a precharge circuit comprising a first terminal electrically connected to the transistor and a second terminal (see fig. 7A – precharge circuit 60); wherein the precharge circuit supplies a charge to the transistor according to a comparison between a potential of the first terminal and a potential of the second terminal (see fig. 7A – note it is obvious that this comparison occurs with the op-amp 64).

As to claim 2, Wu teaches a semiconductor device according to claim 1 (see above rejection), wherein the precharge circuit comprising: a comparison control circuit for the comparison between the potential of the first wiring and the potential of the

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second wiring; and a switch controlled by the comparison control circuit (see fig. 7A – see op-amp 64 and switches 62);

As to claim 3, Wu teaches a semiconductor device according to claim 2 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 7A – op-amp 64).

As to claim 4, Wu teaches a semiconductor device according to claim 2 (see above rejection), wherein the comparison control circuit comprises a chopper inverter transistor (see fig. 7A – and note as best understood a chopper inverter transistor is a chopper inverter circuit and since by definition a chopper is a switch, the chopper inverter circuit includes a switch and an inverter and a capacitor as can be represented by Wu fig. 7A's inverter 68, switches 62, and capacitors C).

As to claim 5, Wu teaches an electronic apparatus having the semiconductor device according to claim 1 (see above rejection), wherein the electronic apparatus is selected from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 7A – LED 30).

As to claim 6, Wu teaches a semiconductor device comprising: a transistor (see fig. 7A – transistor G); a current source electrically connected to the transistor (see fig.

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7A – current source I); a charge supply means (see fig. 7A – note that the charge supply can obviously be the current source I or the Voltage V_{pp}); and a precharge circuit comprising: a comparison control circuit having a first terminal electrically connected to the transistor, a second terminal and third terminal (see fig. 7A – op-amp 64); and a switch electrically connected the third terminal (see fig. 7A – switch 62); wherein the charge supply means is electrically connected to the transistor (see fig. 7A – both V_{pp} and I are electrically connected to transistor G).

As to claim 7, Wu teaches the semiconductor device according to claim 6 (see above rejection), wherein the charge supply means is a current source (see fig. 7A – current source I).

As to claim 8, Wu teaches the semiconductor device according to claim 6 (see above rejection), wherein the charge supply means is a power source (see fig. 7A – voltage V_{pp}).

As to claim 9, Wu teaches the semiconductor device according to claim 6 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 7A - op-amp 64).

As to claim 10, Wu teaches the semiconductor device according to claim 6 (see above rejection), wherein the comparison control circuit comprises a chopper inverter

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transistor (see fig. 7A – and note as best understood a chopper inverter transistor is a chopper inverter circuit and since by definition a chopper is a switch, the chopper inverter circuit includes a switch and an inverter and a capacitor as can be represented by Wu fig. 7A's inverter 68, switches 62, and capacitors C).

As to claim 11, Wu teaches an electronic apparatus having the semiconductor device according to claim 6 (see above rejection), wherein the electronic apparatus is selected from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 7A – LED 30).

As to claim 18, Wu teaches a display device comprising: a pixel (obvious for the LED display to have pixels); a transistor (see fig. 7A – transistor G); a current supply means electrically connected to the transistor (see fig. 7A – current source I); and a precharge circuit comprising a first terminal electrically connected to the transistor and a second terminal (see fig. 7A – precharge circuit 60); wherein the precharge circuit supplies a charge to the transistor according to a comparison between a potential of the first terminal and a potential of the second terminal, and wherein the transistor supplies a current to the pixel (see fig. 7A - note it is obvious that this comparison occurs with the op-amp 64).

As to claim 19, Wu teaches a display device according to claim 18 (see above rejection), wherein the pixel has a light emitting element, and wherein the transistor supplies a current to the light emitting element (see fig. 7A – LED 30).

As to claim 20, Wu teaches a display device according to claim 18 (see above rejection), wherein the precharge circuit comprising: a comparison control circuit for the comparison between the potential of the first wiring and the potential of the second wiring (see fig. 7A – op-amp 64); and a switch controlled by the comparison control circuit (see fig. 7A – switch 62).

As to claim 21, Wu teaches a display device according to claim 20 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 7A – op-amp 62).

As to claim 22, Wu teaches a display device according to claim 20 (see above rejection), wherein the comparison control circuit comprises a chopper inverter transistor (see fig. 7A – and note as best understood a chopper inverter transistor is a chopper inverter circuit and since by definition a chopper is a switch, the chopper inverter circuit includes a switch and an inverter and a capacitor as can be represented by Wu fig. 7A's inverter 68, switches 62, and capacitors C).

As to claim 23, Wu teaches an electronic apparatus having the display device according to claim 18 (see above rejection), wherein the electronic apparatus is selected from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 7A – LED 30).

6. Claims 12-15, 17, 24-28, 30-34, and 36 rejected under 35 U.S.C. 103(a) as being unpatentable over Masanobu Oomura (Patent No.: US 6,693,388 B2).

As to claim 12, Oomura teaches semiconductor device comprising: a transistor comprising a source electrode, a drain electrode and a gate electrode (see fig. 6 – transistor T5); a current source electrically connected to the transistor (see fig. 6 – current source Id); a charge supply means (see fig. 6 – current source Id or voltage Vr, note that the charge supply can obviously be the current source Id or the voltage Vr); and a precharge circuit comprising: a comparison control circuit having a first terminal electrically connected to the transistor, a second terminal and third terminal (see fig. 6 – amp1); and a switch electrically connected the third terminal (see fig. 6 – transistor T2); wherein the gate electrode is electrically connected to any one of the source electrode and the drain electrode, and wherein the charge supply means is electrically connected to any one of the source electrode and the drain electrode (see fig. 6 – transistor T5).

As to claim 13, Oomura teaches a semiconductor device according to claim 12 (see above rejection), wherein the charge supply means is a current source (see fig. 6 – current source I_d).

As to claim 14, Oomura teaches a semiconductor device according to claim 12 (see above rejection), wherein the charge supply means is a power source (see fig. 6 – voltage V_r).

As to claim 15, Oomura teaches the semiconductor device according to claim 12 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 6 – amp1).

As to claim 17, Oomura teaches an electronic apparatus having the semiconductor device according to claim 12 (see above rejection), wherein the electronic apparatus is selected from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 6 – OLED).

As to claim 24, Oomura teaches a display device comprising: a pixel (see fig. 6); a transistor electrically connected to the pixel (see fig. 6 - transistor T5); a current source electrically connected to the transistor (see fig. 6 – current source I_d); a charge

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supply means (see fig. 6 – current source I_d or voltage V_r , note that the charge supply can obviously be the current source I_d or the voltage V_r); and a precharge circuit comprising: a comparison control circuit having a first terminal electrically connected to the transistor, a second terminal and third terminal (see fig. 6 – amp1); and a switch electrically connected the third terminal (see fig. 6 – T2); wherein the charge supply means is electrically connected to the transistor (see fig. 6 – T5).

As to claim 25, Oomura teaches a display device according to claim 24 (see above rejection), wherein the pixel has a light emitting element, and wherein the transistor is electrically connected to the light emitting element (see fig. 6 – OLED).

As to claim 26, Oomura teaches a display device according to claim 24 (see above rejection), wherein the charge supply means is a current source (see fig. 6 – current source I_d).

As to claim 27, Oomura teaches a display device according to claim 24 (see above rejection), wherein the charge supply means is a power source (see fig. 6 – voltage V_r).

As to claim 28, Oomura teaches the display device according to claim 24 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 6 – amp1).

As to claim 30, Oomura teaches an electronic apparatus having the display device according to claim 24 (see above rejection), wherein the electronic apparatus is selected, from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 6 – OLED).

As to claim 31, Oomura teaches a display device comprising: a pixel (see fig. 6); a transistor comprising a source electrode, a drain electrode and a gate electrode (see fig. 6 – transistor T5); a current source electrically connected to the transistor (see fig. 6 – current source Id and transistor T5); a charge supply means (current source Id or voltage Vr, note that the charge supply can obviously be the current source Id or the voltage Vr); and a precharge circuit comprising: a comparison control circuit having a first terminal electrically connected to the transistor, a second terminal and third terminal (see fig. 6 - amp1 and T5); and a switch electrically connected the third terminal (see fig. 6 – T2); wherein the gate electrode is electrically connected to any one of the source electrode and the drain electrode, wherein the charge supply means is electrically connected to any one of the source electrode and the drain electrode, and wherein the pixel is electrically connected to any one of the source electrode and the drain electrode (see fig. 6 – T5, Id or Vr).

As to claim 32, Oomura teaches a display device according to claim 31 (see above rejection), wherein the charge supply means is a current source (see fig. 6 – Id).

As to claim 33, Oomura teaches a display device according to claim 31 (see above rejection), wherein the charge supply means is a power source (see fig. 6 - Vr).

As to claim 34, Oomura teaches the display device according to claim 31 (see above rejection), wherein the comparison control circuit comprises an operational amplifier (see fig. 6 – amp1).

As to claim 36, Oomura teaches an electronic apparatus having the display device according to claim 31 (see above rejection), wherein the electronic apparatus is selected from the group consisting of a light emitting device, a digital still camera, laptop personal computer, a mobile computer, a portable image reproducing device, a goggle type display, a video camera and a portable phone (see fig. 6 – OLED).

7. Claims 16, 29, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masanobu Oomura (Patent No.: US 6,693,388 B2) in view of Jie-Farn Wu (Pub. No.: US 2005/0259054 A1).

As to claim 16, Oomura teaches the semiconductor device according to claim 12 (see above rejection).

Oomura does not teach wherein the comparison control circuit comprises a chopper inverter transistor.

Wu teaches wherein the comparison control circuit comprises a chopper inverter transistor (see fig. 7A – and note as best understood a chopper inverter transistor is a chopper inverter circuit and since by definition a chopper is a switch, the chopper inverter circuit includes a switch and an inverter and a capacitor as can be represented by Wu fig. 7A's inverter 68, switches 62, and capacitors C).

It would have been obvious to one of ordinary skill in the art to substitute the comparison control circuit taught by Wu into the circuit taught by Oomura in order to increase turn-on speed.

As to claim 29, Oomura teaches the display device according to claim 24 (see above rejection).

Oomura does not teach wherein the comparison control circuit comprises a chopper inverter transistor.

Wu teaches wherein the comparison control circuit comprises a chopper inverter transistor (see fig. 7A – and note as best understood a chopper inverter transistor is a chopper inverter circuit and since by definition a chopper is a switch, the chopper inverter circuit includes a switch and an inverter and a capacitor as can be represented by Wu fig. 7A's inverter 68, switches 62, and capacitors C).

It would have been obvious to one of ordinary skill in the art in substitute the comparison control circuit taught by Wu into the circuit taught by Oomura in order to increase turn-on speed.

As to claim 35, Oomura teaches the display device according to claim 31 (see above rejection).

Oomura does not teach wherein the comparison control circuit comprises a chopper inverter transistor.

Wu teaches wherein the comparison control circuit comprises a chopper inverter transistor (see fig. 7A – and note as best understood a chopper inverter transistor is a chopper inverter circuit and since by definition a chopper is a switch, the chopper inverter circuit includes a switch and an inverter and a capacitor as can be represented by Wu fig. 7A's inverter 68, switches 62, and capacitors C).

It would have been obvious to one of ordinary skill in the art in substitute the comparison control circuit taught by Wu into the circuit taught by Oomura in order to increase turn-on speed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER ZUBAJLO whose telephone number is (571)270-1551. The examiner can normally be reached on Monday-Friday, 8 am - 5 pm, EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer Zubajlo/
Examiner, Art Unit 2629
12/6/09

/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629